Title:	Flexural Properties of Poly(Methyl Methacrylate) Resin Reinforced with Oil Palm Empty Fruit Bunch Fibers: A Preliminary Finding
Type:	Article Indexed in ISI/ Web of Knowledge Database
Source (ISSN):	Journal of Prosthodontics (ISSN: 1059-941X)
Status:	A paid open access option is available for this journal.
Author:	John J, Mani SA, Palaniswamy K, Ramanathan A, Razak AAA
Volume (Issue):	24(3):233-238
DOI:	10.1111/jopr.12191
Abstract:	Purpose: The purpose of this preliminary study was to evaluate the flexural properties of poly(methyl methacrylate) (PMMA) reinforced with oil palm empty fruit bunch (OPEFB) fiber. Materials and Methods: The flexural strength and flexural modulus of three OPEFB fiber-reinforced PMMA were compared with a conventional and a commercially available reinforced PMMA. The three test groups included OPEFB fibers of 0.5 mm thickness, 2.0 mm thickness, and OPEFB cellulose. Results: All test group specimens demonstrated improved flexural strength and flexural modulus over conventional PMMA. Reinforcement with OPEFB cellulose showed the highest mean flexural strength and flexural modulus, which were statistically significant when compared to the conventional and commercially reinforced PMMA used in this study. OPEFB fiber in the form of cellulose and 0.5 mm thickness fiber significantly improved flexural strength and flexural modulus of

	conventional PMMA resin. Further investigation on the properties of PMMA reinforced with OPEFB cellulose is warranted. Conclusions: Natural OPEFB fibers, especially OPEFB in cellulose form, can be considered a viable alternative to existing commercially available synthetic fiber reinforced PMMA resin.
Keyword:	pmma; oil palm empty fruit bunch fibers; natural fibers; flexural strength; flexural modulus; denture base materials; mechanical-properties; transverse strength; glass-fiber; biocomposites; composites; morphology; biofibres; maxillary; polymers
Related URL:	http://www.ncbi.nlm.nih.gov/pubmed/24976147 http://onlinelibrary.wiley.com/doi/10.1111/jopr.12191/abstract